

The Concept of Hardware and Electronics

Hardware refers to computer chips, circuit boards, computer systems, and related equipment such as keyed equipment such as keyboards, modems, and printers. The work of computer hardware engineers is very similar to that of electronics engineers, but unlike them, computer hardware engineers work with computers and computer-related equipment exclusively.

Hardware jobs include production and service engineers, R&D and maintenance engineers. Most trained engineers are employed by the computer equipment manufacturers. For this job, a very specialized training is required and that can only be acquired in postgraduate course of computer engineering and technology. A diploma in a specialized branch of engineering with special emphasis on training for specific jobs and work experience may be adequate as qualifications only for some jobs.

Technology related to computers is changing very rapidly; hence there are exciting challenges for the computer professionals in hardware. They can learn new things, experiment and evolve new techniques or hardware for solving information processing problems. Engineers in R&D or servicing do not have a long hierarchical ladder to climb as compared to the software personnel. However, prospects and work remain challenging even after several years as an engineer.

Designing computers

The rapid advances in computer technology are largely a result of the research, development, and design efforts of computer hardware engineers. Thus, hardware engineering is all about designing, developing and implementing solutions.

Electronic and computer engineers work on developing new designs and modifying earlier ones. They need to be aware of the latest trends, products and developments in electronic technology both in Australia and Other countries. Their job is to ensure that their company builds the most advanced machines at reasonable costs. Work in hardware can also be in research and development. They may work on chip, circuit design, computer architecture or the design of devices that are not a part of the computer but work with it, such as a printer. R&D may also be in peripheral integration, e.g., making a printer works with the company's computer. Having developed the product, a fair amount of time is spent on controlling product quality and reliability. Engineers who design and develop computers only work for the big manufacturers. They are based at the company's head office or its manufacturing unit.

Chip Design

Chips and processors are now used in almost everything - from aerospace to computers, complex electronic gadgets to everyday appliances, mobile phones, dishwashers and so on. And it's the Very Large Scale Integration (VLSI) design engineer's efforts that make this work. They conceive and design minuscule chips of silicon wafers and with architecture of these sends them for manufacturing. For more detail, [click here](#).

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